TOSHIBA BUSINESS

FIG. 1

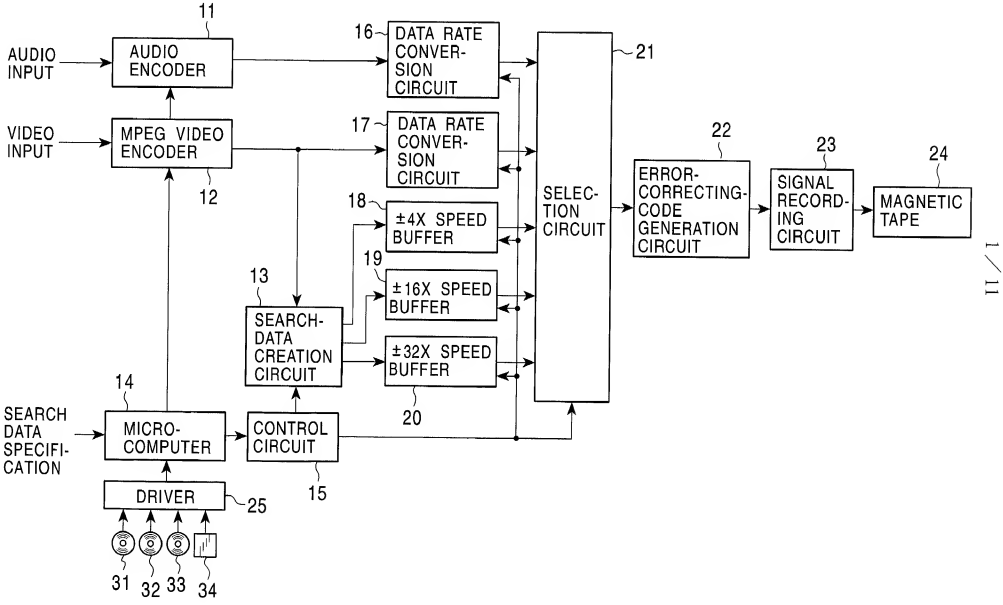

FIG. 2

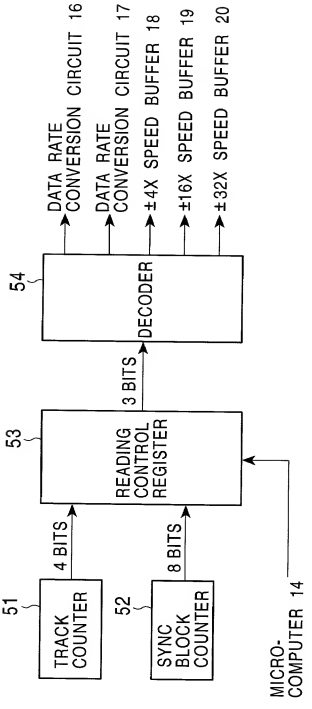
51
TRACK COUNTER
4 BITS
52
SYNC BLOCK COUNTER
8 BITS
53
READING CONTROL REGISTER
3 BITS
54
DECODER
DATA RATE CONVERSION CIRCUIT 16
DATA RATE CONVERSION CIRCUIT 17
±4X SPEED BUFFER 18
±16X SPEED BUFFER 19
±32X SPEED BUFFER 20
MICRO-COMPUTER 14

FIG. 3

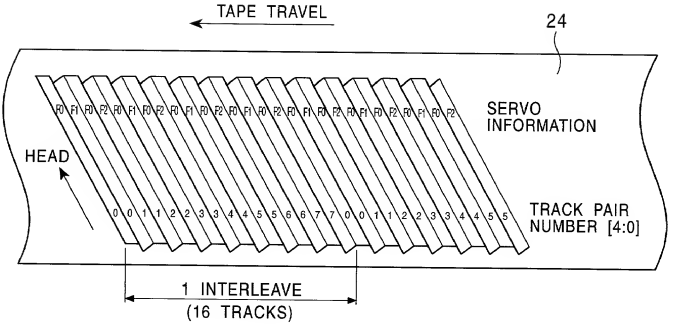
TAPE TRAVEL
24
SERVO INFORMATION
HEAD
TRACK PAIR NUMBER [4:0]
1 INTERLEAVE
(16 TRACKS)

FIG. 4

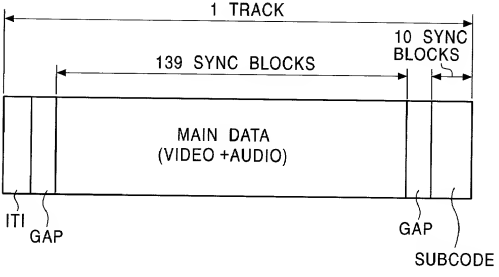
1 TRACK
10 SYNC BLOCKS
139 SYNC BLOCKS
MAIN DATA
(VIDEO +AUDIO)
ITI
GAP
GAP
SUBCODE

FIG. 5

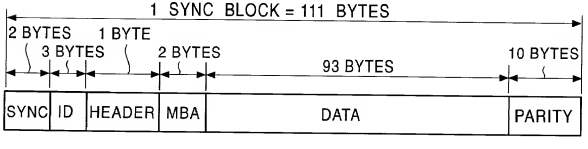
1 SYNC BLOCK = 111 BYTES
2 BYTES
3 BYTES
1 BYTE
2 BYTES
93 BYTES
10 BYTES
SYNC
ID
HEADER
MBA
DATA
PARITY

FIG. 6

TYPE OF MAIN DATA			CONTENTS				
b7	b6	b5	b4	b3	b2	b1	b0
0 PES-VIDEO			F/P	CONTINUITY COUNTER			
1 PES-AUDIO			F/P	CONTINUITY COUNTER			
2 SEARCH			V/A	SEARCH SPEED			RES
3 AUX			AUX MODE			RESERVED	
4 TS-1H			JUMP FLAG	TIME STAMP			
5 TS-2H			CONTINUITY COUNTER				
6 NULL			RESERVED				
7 RESERVED			RESERVED				

P/F: PARTIAL/FULL
V/A: VIDEO/AUDIO

FIG. 7

SEARCH SPEED
0 : RESERVED
1 : 4X SPEED
2 : 8X SPEED
3 : RESERVED
4 : 16X SPEED
5 : 32X SPEED
6-7 : RESERVED

FIG. 8

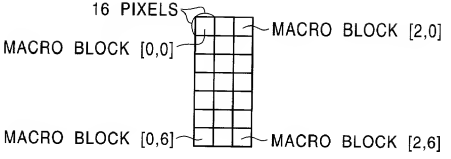
16 PIXELS
MACRO BLOCK [0,0]
MACRO BLOCK [2,0]
MACRO BLOCK [0,6]
MACRO BLOCK [2,6]

FIG. 9

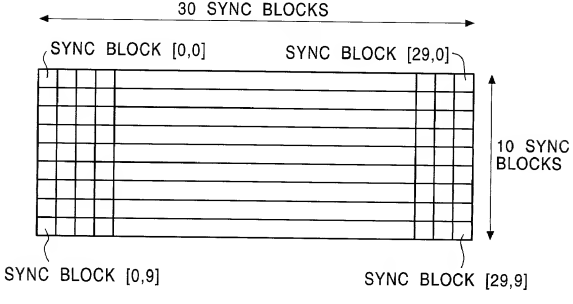
30 SYNC BLOCKS
SYNC BLOCK [0,0]
SYNC BLOCK [29,0]
10 SYNC BLOCKS
SYNC BLOCK [0,9]
SYNC BLOCK [29,9]

FIG. 10

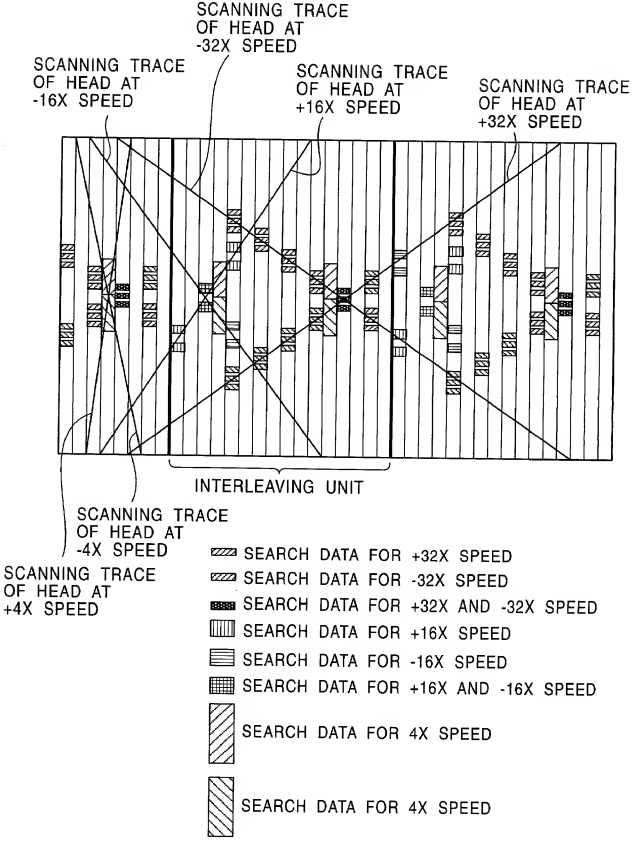
SCANNING TRACE OF HEAD AT -32X SPEED
SCANNING TRACE OF HEAD AT -16X SPEED
SCANNING TRACE OF HEAD AT +16X SPEED
SCANNING TRACE OF HEAD AT +32X SPEED
INTERLEAVING UNIT
SCANNING TRACE OF HEAD AT -4X SPEED
SCANNING TRACE OF HEAD AT +4X SPEED
SEARCH DATA FOR +32X SPEED
SEARCH DATA FOR -32X SPEED
SEARCH DATA FOR +32X AND -32X SPEED
SEARCH DATA FOR +16X SPEED
SEARCH DATA FOR -16X SPEED
SEARCH DATA FOR +16X AND -16X SPEED
SEARCH DATA FOR 4X SPEED
SEARCH DATA FOR 4X SPEED

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FIG. 11

SEARCH VIDEO DATA TO BE RECORDED	BIT RATE OF SEARCH VIDEO DATA	BIT RATE OF NORMAL-PLAYBACK VIDEO DATA
NONE	0 Mbps	26 Mbps
4X SPEED	0.5 Mbps	25.5 Mbps
4X SPEED, 16X SPEED	1 Mbps	25 Mbps
4X SPEED, 16X SPEED, 32X SPEED	1.7 Mbps	24.3 Mbps

FIG. 12

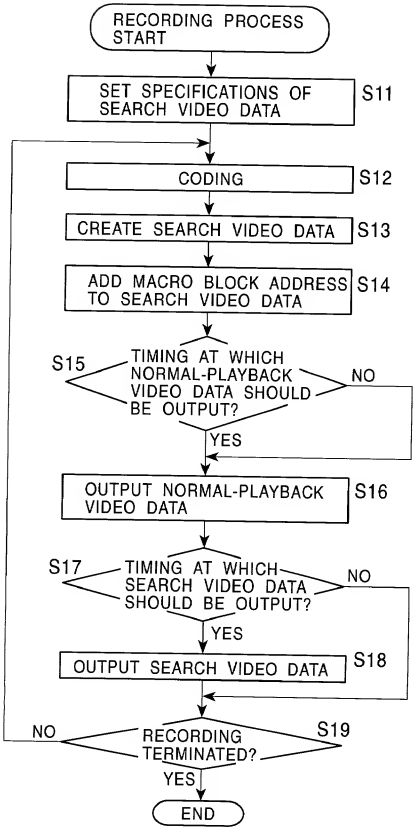

RECORDING PROCESS START
SET SPECIFICATIONS OF SEARCH VIDEO DATA
S11
CODING
S12
CREATE SEARCH VIDEO DATA
S13
ADD MACRO BLOCK ADDRESS TO SEARCH VIDEO DATA
S14
S15
TIMING AT WHICH NORMAL-PLAYBACK VIDEO DATA SHOULD BE OUTPUT?
NO
YES
OUTPUT NORMAL-PLAYBACK VIDEO DATA
S16
S17
TIMING AT WHICH SEARCH VIDEO DATA SHOULD BE OUTPUT?
NO
YES
OUTPUT SEARCH VIDEO DATA
S18
NO
RECORDING TERMINATED?
S19
YES
END

FIG. 13

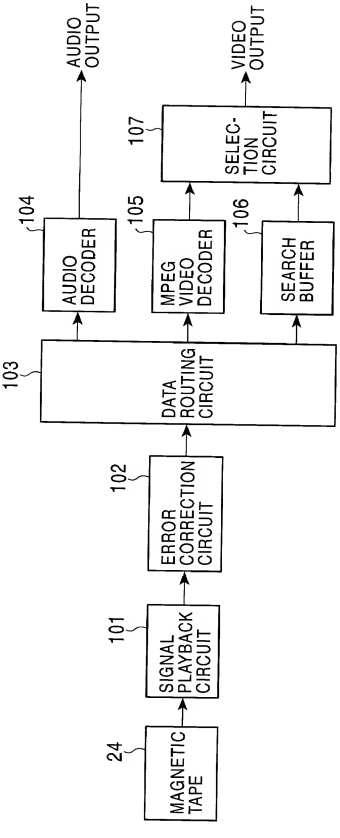
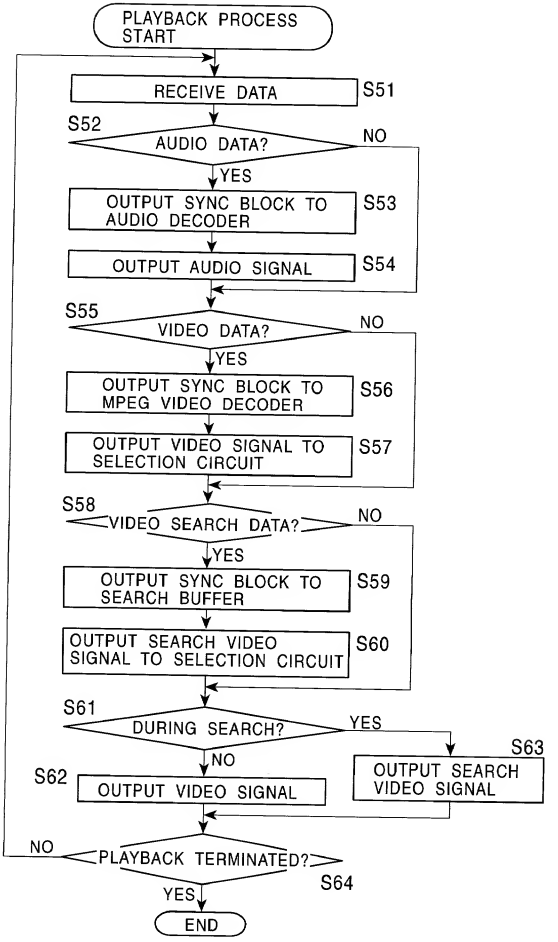

24
MAGNETIC TAPE
101
SIGNAL PLAYBACK CIRCUIT
102
ERROR CORRECTION CIRCUIT
103
DATA ROUTING CIRCUIT
104
AUDIO DECODER
105
MPEG VIDEO DECODER
106
SEARCH BUFFER
107
SELEC-TION CIRCUIT
AUDIO OUTPUT
VIDEO OUTPUT

FIG. 14


PLAYBACK PROCESS START
RECEIVE DATA
S51
S52
AUDIO DATA?
NO
YES
OUTPUT SYNC BLOCK TO AUDIO DECODER
S53
OUTPUT AUDIO SIGNAL
S54
S55
VIDEO DATA?
NO
YES
OUTPUT SYNC BLOCK TO MPEG VIDEO DECODER
S56
OUTPUT VIDEO SIGNAL TO SELECTION CIRCUIT
S57
S58
VIDEO SEARCH DATA?
NO
YES
OUTPUT SYNC BLOCK TO SEARCH BUFFER
S59
OUTPUT SEARCH VIDEO SIGNAL TO SELECTION CIRCUIT
S60
S61
DURING SEARCH?
YES
NO
S63
OUTPUT SEARCH VIDEO SIGNAL
S62
OUTPUT VIDEO SIGNAL
NO
PLAYBACK TERMINATED?
S64
YES
END